UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,499	12/28/2001	David J. Long	50277-1768	3702

			EXAMINER
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ART UNIT	PAPER NUMBER
2192	

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/040,499	LONG ET AL.
	Examiner	Art Unit	
	Michael J. Yigdall	2192	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>23 January 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>75-98</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>75-98</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>1/23, 2/3, 3/13/06</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on January 23, 2006 has been entered. Claims 75-

98 are now pending.

Response to Arguments

2.   Applicant's arguments with respect to the claims have been considered but are moot in

view of the new ground(s) of rejection, as set forth below. Applicant's amendment necessitated

the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   Claims 75-78, 82 and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over

U.S. Patent No. 5,504,892 to Atsatt et al. (now made of record, "Atsatt") in view of U.S. Patent

No. 6,769,124 to Schoening et al. (art of record, "Schoening").

With respect to claim 75 (new), Atsatt discloses a method comprising performing a

machine-executed operation involving instructions (see, for example, column 13, line 8 to

column 14, line 3), wherein the machine-executed operation is at least one of:

A) sending the instructions over transmission media;

B) receiving the instructions over transmission media;

C) storing the instructions onto a machine-readable storage medium; and

D) executing the instructions;

wherein the instructions are instructions which, when executed by one or more

processors, cause the one or more processors to perform the steps of:

storing in association with a file system, a first object that defines a first method and an

implementation of said first method, wherein said first object is an instance of a first object class ,

(see, for example, FIG. 8 and column 24, lines 45-52, which shows a first object of the

"TFileAccessControlList" class that defines access control methods); and

associating said first method with a first instance of a second object class that defines the

properties of a file type associated with said file system, wherein the first method is not a method

in said second object class (see, for example, FIG. 9 and column 15, lines 30-37, which shows a

first "TFile" instance of a second "TFSEntity" class that defines properties of a file system

entity, and column 15, lines 55-60, which shows associating the first "TFileAccessControlList"

object and its methods with the "TFile" instance).

Atsatt does not expressly disclose storing the first object within a database.

However, Schoening teaches storing such objects in a database (see, for example, column

26, lines 57-67) to enable persistent storage (see, for example, column 3, lines 32-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teachings of Schoening into Atsatt, such that the first

object is stored within a database, so as to enable persistent storage of the object.

With respect to claim 76 (new), the rejection of claim 75 is incorporated, and Atsatt in

view of Schoening further discloses that said first method is not associated with a second

instance of said second object class (see, for example, Atsatt, FIG. 9 and column 16, lines 12-16,

which shows a second "TDirectory" instance of the second "TFSEntity" class, and column 17,

lines 29-34, which shows that the first "TFileAccessControlList" object and its methods are not

associated with the "TDirectory" instance).

With respect to claim 77 (new), the rejection of claim 75 is incorporated, and Atsatt in

view of Schoening further discloses that said second object class defines properties of folders in

a file system (see, for example, Atsatt, column 16, lines 12-16, which shows that the second

"TFSEntity" class defines properties of directories or folders in a file system).

With respect to claim 78 (new), the rejection of claim 75 is incorporated, and Atsatt in

view of Schoening further discloses that said second object class defines properties of documents

in a file system (see, for example, Atsatt, column 15, lines 30-37, which shows that the second

"TFSEntity" class defines properties of files or documents in a file system).

With respect to claim 82 (new), the rejection of claim 75 is incorporated, and Atsatt in

view of Schoening further discloses that the instructions are instructions which, when executed

by one or more processors, cause the one or more processors to perform the steps of:

in response to receiving a request for a file system operation involving said first instance (see, for example, Atsatt, column 23, lines 37-53), instantiating a transaction object that defines one or more methods from a group of database operations consisting of an insert operation, a save operation, an update operation, a delete operation, a commit operation, and a rollback operation (see, for example, Schoening, column 53, lines 1-13, which shows instantiating a transaction object, and column 52, lines 51-67, which shows that the transaction object defines methods for at least an update operation and a commit operation); and

invoking at least one of said one or more methods for operation on said first instance of said second object class (see, for example, Schoening, column 53, line 62 to column 54, line 5, which shows invoking the commit method on an object).

With respect to claim 83 (new), the rejection of claim 82 is incorporated, and Atsatt in view of Schoening further discloses that invoking at least one of said one or more methods comprises invoking, in association with a single database transaction, more than one of said one or more methods (see, for example, Schoening, column 53, line 62 to column 54, line 5, which shows that more than one method is associated with a single database transaction).

5.   Claims 79-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atsatt in view of Schoening, as applied to claim 78 above, and further in view of U.S. Patent No. 5,864,870 to Guck (now made of record, "Guck").

With respect to claim 79 (new), the rejection of claim 78 is incorporated. Atsatt further discloses that the second "TFSEntity" class can be sub-classed to define properties specific to the sub-class (see, for example, column 10, lines 53-62), but Atsatt in view of Schoening does not

expressly disclose that said second object class is sub-classed with a sub-class that defines properties of a text type of document in a file system.

However, Guck discloses sub-classing a "Virtual File" class with sub-classes that define properties of different types of documents in a file system (see, for example, FIGS. 4A and 4B, and column 8, lines 21-35), so as to encapsulate properties that are common to all file types (see, for example, column 6, lines 49-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Guck into Atsatt and Schoening, such that said second object class is sub-classed with a sub-class that defines properties of a text type of document in a file system, so as to encapsulate properties that are common to all document types while defining properties specific to the text type.

With respect to claim 80 (new), the rejection of claim 78 is incorporated. Atsatt further discloses that the second "TFSEntity" class can be sub-classed to define properties specific to the sub-class (see, for example, column 10, lines 53-62), but Atsatt in view of Schoening does not expressly disclose that said second object class is sub-classed with a sub-class that defines properties of a spreadsheet type of document in a file system.

However, Guck discloses sub-classing a "Virtual File" class with sub-classes that define properties of different types of documents in a file system (see, for example, FIGS. 4A and 4B, and column 8, lines 21-35), so as to encapsulate properties that are common to all file types (see, for example, column 6, lines 49-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Guck into Atsatt and Schoening, such that

said second object class is sub-classed with a sub-class that defines properties of a spreadsheet

type of document in a file system, so as to encapsulate properties that are common to all

document types while defining properties specific to the spreadsheet type.

With respect to claim 81 (new), the method of claim 78 is incorporated. Atsatt further

discloses that the second "TFSEntity" class can be sub-classed to define properties specific to the

sub-class (see, for example, column 10, lines 53-62), but Atsatt in view of Schoening does not

expressly disclose that said second object class is sub-classed with a sub-class that defines

properties of a presentation type of document in a file system.

However, Guck discloses sub-classing a "Virtual File" class with sub-classes that define

properties of different types of documents in a file system (see, for example, FIGS. 4A and 4B,

and column 8, lines 21-35), so as to encapsulate properties that are common to all file types (see,

for example, column 6, lines 49-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teachings of Guck into Atsatt and Schoening, such that

said second object class is sub-classed with a sub-class that defines properties of a presentation

type of document in a file system, so as to encapsulate properties that are common to all file

types while defining properties specific to the presentation type.

6.   Claims 84-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atsatt in

view of Schoening, as applied to claim 75 above, and further in view of U.S. Patent No.

6,119,151 to Cantrell et al. (now made of record, "Cantrell").

With respect to claim 84 (new), the rejection of claim 75 is incorporated, and Atsatt and Schoening further discloses that the instructions are instructions which, when executed by one or more processors, cause the one or more processors to perform the step of:

maintaining file system metadata for one or more instances of said second object class (see, for example, Atsatt, column 18, lines 48-56).

Atsatt in view of Schoening does not expressly disclose maintaining a cache of the file system metadata.

However, Cantrell discloses maintaining a cache of such file system metadata (see, for example, column 6, lines 35-50) to increase speed and efficiency (see, for example, column 3, lines 52-56).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Cantrell into Atsatt and Schoening, such that the file system metadata is maintained in a cache, so as to increase the speed and efficiency of access to the metadata.

With respect to claim 85 (new), the rejection of claim 84 is incorporated, and Atsatt in view of Schoening in view of Cantrell further discloses that maintaining a cache of file system metadata comprises maintaining a cache of access permissions associated with instances of said second object class (see, for example, Atsatt, column 24, lines 45-52, which shows maintaining access permissions associated with instances of the second "TFSEntity" class, and see, for example, Cantrell, FIG. 5 and column 7, lines 8-13, which further shows maintaining a cache of such access permissions).

With respect to claim 86 (new), the rejection of claim 84 is incorporated, and Atsatt in view of Schoening in view of Cantrell further discloses that maintaining a cache of file system metadata comprises

maintaining a cache of a first access permission associated with said first instance of said second object class, wherein said first access permission is associated with said first instance based on said first method (see, for example, Atsatt, column 24, lines 45-52, which shows maintaining access permissions, and column 15, lines 61-63, which shows access permissions associated with the first "TFile" instance based on the first "TFileAccessControlList" object and its methods, and see, for example, Cantrell, FIG. 5 and column 7, lines 8-13, which further shows maintaining a cache of such access permissions); and

maintaining a cache of a second access permission associated with a second instance of said second object class, wherein said second access permission is associated with said second instance based on a second method defined in a third object that defines said second method and an implementation of said second method, wherein said third object is an instance of a third object class (see, for example, Atsatt, column 24, lines 45-52, which shows maintaining access permissions, and column 17, lines 35-37, which shows access permissions associated with a second "TDirectory" instance based on a third "TDirectoryAccessControlList" object and its methods, and see, for example, Cantrell, FIG. 5 and column 7, lines 8-13, which further shows maintaining a cache of such access permissions).

With respect to claim 87 (new), the rejection of claim 84 is incorporated, and Atsatt in view of Schoening in view of Cantrell further discloses that maintaining a cache of file system metadata comprises maintaining a cache of pathnames to files that are instances of said second

object class (see, for example, Atsatt, column 20, lines 32-44, which shows maintaining properties associated with instances of the second "TFSEntity" class, and see, for example, Cantrell, FIG. 5 and column 6, lines 35-50, which further shows maintaining a cache of properties such as pathnames).

With respect to claim 88 (new), the rejection of claim 84 is incorporated, and Atsatt in view of Schoening in view of Cantrell further discloses that maintaining a cache of file system metadata comprises

maintaining a cache of a first pathname to said first instance of said second object class, wherein said first pathname is associated with said first instance based on said first method (see, for example, Atsatt, column 15, lines 61-63, which shows access permissions associated with the first "TFile" instance based on the first "TFileAccessControlList" object and its methods, and column 20, lines 32-44, which shows maintaining other such properties, and see, for example, Cantrell, FIG. 5 and column 7, lines 8-13, which further shows maintaining a cache of properties such as pathnames); and

maintaining a cache of a second pathname to a second instance of said second object class, wherein said second pathname is associated with said second instance based on a second method defined in a third object that defines said second method and an implementation of said second method, wherein said third object is an instance of a third object class (see, for example, Atsatt, column 17, lines 35-37, which shows access permissions associated with a second "TDirectory" instance based on a third "TDirectoryAccessControlList" object and its methods, and column 20, lines 32-44, which shows maintaining other such properties, and see, for

example, Cantrell, FIG. 5 and column 7, lines 8-13, which further shows maintaining a cache of properties such as pathnames).

7.   Claims 89-98 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atsatt in view of Schoening, as applied to claim 75 above, and further in view of U.S. Patent No. 5,701,485 to Guillen et al. (art of record, "Guillen").

With respect to claim 89 (new), the rejection of claim 75 is incorporated, and Atsatt in view of Schoening further discloses that associating said first method with a first instance of a class comprises:

creating a first bundle object that is an instance of a first bundle class and that references one or more objects that define respective methods and corresponding implementations of said methods, wherein said first bundle class references said first object (see, for example, Atsatt, FIG. 2 and column 17, lines 39-47, which shows creating a first bundle object of the "TVolume" class that references one or more "TFSEntity" objects, and column 14, lines 17-23, which shows that the "TFSEntity" objects define methods); and

associating said first instance of said second object class with said first bundle object (see, for example, Atsatt, column 17, lines 3-15, which shows associating the first "TFile" instance of the second "TFSEntity" class with an object such as the first bundle object).

Atsatt further discloses that the "TFSEntity" objects define different methods that are specific to "TFile" and "TDirectory" instances (see, for example, column 15, lines 30-37 and column 16, lines 12-16), but Atsatt in view of Schoening does not expressly disclose that the methods are per-instance methods.

However, Guillen teaches defining such per-instance methods (see, for example, FIG. 3 and column 7, lines 7-20), so as to enable an object to override selected methods of its class and to define other methods specific to the object (see, for example, column 2, lines 15-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Guillen into Atsatt and Schoening, such that the referenced objects define respective per-instance methods and corresponding implementations of said per-instance methods, so as to enable the referenced objects to override selected methods and define other methods specific to each object.

With respect to claim 90 (new), the rejection of claim 89 is incorporated, and Atsatt in view of Schoening in view of Guillen further discloses that associating said first instance of said second object class with said first bundle object comprises creating a pointer that belongs to said first instance to point to said first bundle object (see, for example, Atsatt, column 15, lines 11-13, which shows creating a pointer to the first bundle object of the "TVolume" class).

With respect to claim 91 (new), the rejection of claim 89 is incorporated, and Atsatt in view of Schoening in view of Guillen further discloses that creating said first bundle object comprises creating a pointer that belongs to said first bundle object to point to said one or more objects (see, for example, Atsatt, column 22, lines 35-42, which shows creating a pointer to the one or more "TFSEntity" objects).

With respect to claim 92 (new), the rejection of claim 89 is incorporated, and Atsatt in view of Schoening in view of Guillen further discloses that associating said first instance of said second object class with said first bundle object comprises creating a reference that belongs to

said first instance to reference said first bundle object (see, for example, Atsatt, column 15, lines 11-13, which shows creating a reference to the first bundle object of the "TVolume" class).

With respect to claim 93 (new), the rejection of claim 92 is incorporated, and Atsatt in view of Schoening in view of Guillen further discloses that associating said first bundle object comprises creating a pointer that belongs to said first bundle object to point to said one or more objects (see, for example, Atsatt, column 22, lines 35-42, which shows creating a pointer to the one or more "TFSEntity" objects).

With respect to claim 94 (new), the rejection of claim 89 is incorporated, and Atsatt in view of Schoening in view of Guillen further discloses that associating said first bundle object comprises creating a reference that belongs to said first bundle object to reference said one or more objects (see, for example, Atsatt, column 22, lines 35-42, which shows creating a reference to the one or more "TFSEntity" objects).

With respect to claim 95 (new), the rejection of claim 89 is incorporated, and Atsatt in view of Schoening in view of Guillen further discloses that creating said first bundle object comprises creating a hash table for indexing said first bundle object (see, for example, Atsatt, column 18, lines 23-29, which shows creating an index for indexing the first bundle object of the "TVolume" class, and Schoening, column 32, line 62 to column 33, line 6, which further shows creating a "HashMap" hash table for indexing such an object in the database).

With respect to claim 96 (new), the rejection of claim 95 is incorporated, and Atsatt in view of Schoening in view of Guillen further discloses that creating said first bundle object

comprises placing an entry in said hash table (see, for example, Schoening, column 33, lines 21-27), the method further comprising the computer-implemented steps of:

associating a key and a value with said entry (see, for example, Schoening, column 33, lines 2-6, which shows associating a key and value with the hash table entry);

using a method name as said key (see, for example, Schoening, column 33, lines 7-10, which shows using a column name as the key, and column 29, lines 37-46, which shows that the column name is a field name of the object, and see, for example, Atsatt, column 14, lines 17-23, which further shows that the fields of the objects are methods); and

using an association between said first bundle object and said first object as said value (see, for example, Schoening, column 29, lines 23-31, which shows using an object identifier or association as the value).

With respect to claim 97 (new), the rejection of claim 96 is incorporated, and Atsatt in view of Schoening in view of Guillen further discloses that said value is a pointer to said first object (see, for example, Schoening, column 29, lines 44-46, which shows that the object identifier used as the value is a reference or pointer to an object).

With respect to claim 98 (new), the rejection of claim 96 is incorporated, and Atsatt in view of Schoening in view of Guillen further discloses that said value is a reference to said first object (see, for example, Schoening, column 29, lines 44-46, which shows that the object identifier used as the value is a reference or pointer to an object).

Conclusion

8.   The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure (see the attached Notice of References Cited).

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Yigdall whose telephone number is (571) 272-3707. The examiner can normally be reached on Monday through Friday from 7:30am to 4:00pm.
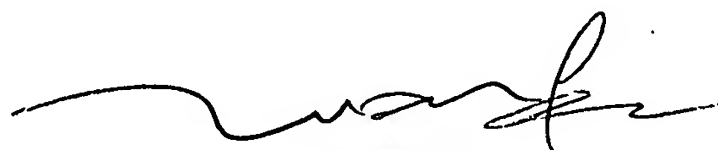
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

<div style="text-align:right">

Michael J. Yigdall

MY   Examiner

Art Unit 2192

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TUAN DAM
SUPERVISORY PATENT EXAMINER